

This procedure covers the sampling of CF₃I gas from the bubble chamber inner vessel.

- 1) Review procedure 4 "[CF3I Handling Procedure](#)"
- 2) Ensure that the hydraulic system is appropriately initialized. It should be pressurized, with the inner vessel near full extension. Its temperature should be above 20°C.
- 3) Ensure that the CF₃I sample bag is empty and appropriately labeled for the sample to be taken
- 4) Assemble the CF₃I transfer lines, vacuum pump, and the CF₃I sample bag. The plumbing consists of a flexible connection from the main Cartan valve (MV-22) to the CF₃I sample bag. No filter is required. The line is equipped with a tee to a vacuum gauge, an isolation valve and a vacuum pump.
- 5) Ensure MV-22 is closed. Turn on the vacuum pump, open the plumbing to the vacuum pump and evacuate the CF₃I transfer lines. Open the valve to the sample bag. Once they are evacuated, isolate and turn off the vacuum pump. Record the vacuum pressure, wait 5 minutes, and re-check the vacuum pressure. Ensure there are no leaks. Close the valve to the sample bag.
- 6) Ensure that you have the "Commissioning Tool" running. Initiate data logging every 5 seconds.
- 7) Use the hydraulic piston position controls to drive the fast piston down to near its stop and to extend the bellows. Be very careful not to overextend the bellows.
- 8) Follow the "Before Handling CF₃I" section of procedure 4.
- 9) Verify that the vacuum pump line is closed and the sample bag valve is closed. Very slowly open MV-22. Around 75psi of pressure will now fill the line. Close MV-22. Open the valve on the sample bag. The bag will inflate slightly, bringing the line pressure back down to atmosphere. Repeat this step until the desired volume (no more than half of the sample bag volume) has been sampled.
- 10) Close MV-22 and the sample bag valve.
- 11) Move the hydraulic ram up to bring the inner vessel to near neutral bellows position.
- 12) Vent the transfer line and disconnect it from both the inner vessel and the sample bag. Cap the port on the inner vessel.
- 13) Store the sample bag with the MSDS for CF₃I in a light-tight container. Label the outside of the light-tight container.
- 14) Ensure the "After Handling CF₃I" section of procedure 4 was followed.

2-Liter (4-kg) Bubble Chamber:
4.3 Bubble Chamber CF₃I Sample Procedure

v. 1 Oct 20, 2011, C.E. Dahl
Written Procedure

15) Terminate data acquisition.